

RESPONSE TO ELECTION OF SPECIES AND PRELIMINARY AMENDMENT
Attorney Docket No.: Q83885
U.S. Application No.: 10/509,488

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-19: (cancelled)

Claim 20 (new): A device (1, 9, 10) for converting solar energy into thermal energy, comprising:

a sunlight transmitting plate (2);

a heat-conducting substrate (5), which is spaced from the transmitting plate by a predetermined distance, said heat-conducting substrate having one or more channels (6) formed therein through which a heat transferring medium is present; and

a layer of VAREM material (4) disposed between the sunlight-transmitting plate (2) and substrate (5), wherein optical properties of the VAREM material are variable between a reflecting condition and an absorbing condition in the optical part of the spectrum.

Claim 21 (new): Device according to claim 20, wherein the VAREM layer comprises an absorbing phase, wherein sunlight transmitted by the sunlight transmitting plate is converted into heat, which heat is discharged by means of the heat conducting substrate (5).

RESPONSE TO ELECTION OF SPECIES AND PRELIMINARY AMENDMENT

Attorney Docket No.: Q83885

U.S. Application No.: 10/509,488

Claim 22 (new): Device according to claim 21, wherein the VAREM layer (4) abuts against the substrate (5).

Claim 23 (new): . Device according to claim 20, wherein a layer of photovoltaic units (3) is present between the VAREM layer (4) and the sunlight-transmitting plate (2).

Claim 24 (new): Device according to claim 23, wherein the layer of photovoltaic units (3) abuts against the VAREM layer (4).

Claim 25 (new): Device according to claim 21, wherein the sunlight-transmitting plate (2, 11) also transmits infrared radiation.

Claim 26 (new): Device according to claim 20, wherein the VAREM layer (4) is present on a Trombe wall.

Claim 27 (new): Device according to claim 20, wherein the VAREM layer (4) is built up of, in succession, a metal alloy, a solid electrolyte and an electrode, which VAREM layer (4) is enveloped by a closed hydrogen atmosphere, wherein the hydrogen concentration of

RESPONSE TO ELECTION OF SPECIES AND PRELIMINARY AMENDMENT

Attorney Docket No.: Q83885

U.S. Application No.: 10/509,488

the metal alloy is controlled by applying an electric voltage between the electrode and the metal alloy.

Claim 28 (new): Device according to claim 20, wherein the VAREM layer (4) is built up of, in succession, a metal alloy, a solid electrolyte, a storage electrode, a top electrode, and a hydrogen-impermeable layer, wherein the hydrogen concentration of the metal alloy is controlled by applying an electric voltage between the electrode and the metal alloy.

Claim 29 (new): Device according to claim 27, wherein said electric voltage is generated by using a photocell.

Claim 30 (new): Device according to claim 27, wherein the metal alloy is selected from an alloy of Mg and a transition metal selected from the group consisting of Ni, Co and Fe.

Claim 31 (new): Device according to claim 27, wherein the solid electrolyte is selected from the group consisting of ZrO₂ and Y:CaF₂.

RESPONSE TO ELECTION OF SPECIES AND PRELIMINARY AMENDMENT

Attorney Docket No.: Q83885

U.S. Application No.: 10/509,488

Claim 32 (new): Device according to claim 27, wherein the storage electrode includes W0₃.

Claim 33 (new): Device according to claim 27, wherein either ZrO₂ or yttrium oxide is used for the hydrogen-impermeable layer.

Claim 34 (new): Device according to claim 27, wherein the storage electrode and the top form one unit obtained from transition metals consisting of V, Nb, Ta and Pd.